

## RESUME

**March-2021**

### 1. PERSONAL DETAILS

Full Name: **Charlotte Vogt**  
Identity No: 890912660  
Date of birth: 28/9/1991  
Place of birth: Utrecht  
Marital status: single  
Phone numbers: 0524510446  
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### 2. ACADEMIC DEGREES

2020 PhD (cum laude), Faculty of Chemistry, Utrecht University, Netherlands  
2015 MSc (cum laude), Faculty of Chemistry, Utrecht University, Netherlands  
2013 BSc , Faculty of Chemistry, Utrecht University, Netherlands

### 3. ACADEMIC APPOINTMENTS

2020 - 2021 Postdoctoral fellow, Faculty of Chemistry, Hebrew University of Jerusalem and Weizmann Institute of Science, Rehovot, Israel  
2019 - 2020 Visiting Fellow, Faculty of Chemistry, Weizmann Institute of Science, Rehovot, Israel

### 4. PROFESSIONAL EXPERIENCE (OUTSIDE ACADEMIA)

2015 - 2015 Investor relations intern, Albemarle  
2015 - 2017 Market analysis and consulting, Freelance  
2014 - 2015 Young council member, Rabobank

## 5. RESEARCH INTERESTS (BRIEFLY)

- Catalysis
- Operando spectroscopy

## 6. TEACHING EXPERIENCE

2016 - 2019 Catalysis, 3rd year Bachelor course , Utrecht University

2017 - 2019 Biophysics, 1st year Bachelor course , Utrecht University

## 7. TECHNION ACTIVITIES

## 8. DEPARTMENTAL ACTIVITIES

## 9. PUBLIC PROFESSIONAL ACTIVITIES

## 10. MEMBERSHIP IN PROFESSIONAL SOCIETIES

## 11. FELLOWSHIPS, AWARDS AND HONORS

2018 Best Lecture Award, Materials **Characterization** Catalysis conference, ETH Zurich

2019 Fellowship, VATAT Fellowship "for outstanding international students", Weizmann Institute of Science, Rehovot

2019 Outstanding Female Scientist prize, Israel Vacuum Society and Intel, Israel Vacuum Society and Intel

2020 Fellowship, Niels Stensen Fellow "for outstanding young scientists with exceptional social commitment", Stichting Benevolentia

## 12. GRADUATE STUDENTS

### Completed PhD theses

### Completed MSc Theses

2018 Ellen Sterk , Density functional theory and microkinetic modelling of structure sensitivity in carbon dioxide hydrogenation over nickel ,(Charlotte Vogt Co-Supervisor with Bert Weckhuysen )

2019 Jelle Kranenborg , Structure sensitivity in steam and dry methane reforming ,(Charlotte Vogt Co-Supervisor with Bert Weckhuysen )

## PhD Theses in Progress

## MSc Theses in Progress

## 13. SPONSORED LONG-TERM VISITORS AND POST-DOCTORAL ASSOCIATES

## 14. RESEARCH GRANTS

### Competitive

### Industrial and other sources

## 15. PUBLICATIONS

### 15.1 Theses

**Charlotte Vogt** (2020) "Structure Sensitivity in Catalysis" Bert M. Weckhuysen, Utrecht University

### 15.2 Refereed papers in professional journals

Combined operando UV/Vis/IR spectroscopy reveals the role of methoxy and aromatic species during the methanol-to-olefins reaction over H-SAPO-34

Qingyun Qian, **Charlotte Vogt**, Mohamed Mokhtar, Abdullah M. Asiri, Javier Ruiz-Martinez and Bert M. Weckhuysen  
ChemCatChem, 2014, 6, 3396-3408.  
[doi.org/10.1002/cctc.201402714](https://doi.org/10.1002/cctc.201402714)

The effect of feedstock and catalyst impurities on the methanol-to-olefin reaction over H-SAPO-34 molecular sieves

**Charlotte Vogt**, Bert M. Weckhuysen, Javier Ruiz-Martínez  
ChemCatChem, 2016, 9, 183-194  
[doi.org/10.1002/cctc.201600860](https://doi.org/10.1002/cctc.201600860)

Unravelling structure sensitivity in CO<sub>2</sub> hydrogenation over nickel

**Charlotte Vogt**, Esther Groeneveld, Gerda Kamsma, Maarten Nachtegaal, Li Lu, Christopher J. Kiely, Peter H. Berben, Florian Meirer, Bert M. Weckhuysen  
Nature Catalysis, 2018, 1, 127-134.  
[doi.org/10.1038/s41929-017-0016-y](https://doi.org/10.1038/s41929-017-0016-y)

- “Highly cited paper”

The renaissance of the Sabatier reaction and its applications on Earth and in space

**Charlotte Vogt**, Matteo Monai, Gert Jan Kramer and Bert M. Weckhuysen

Nature Catalysis, 2019, 2, 188-197.

doi.org/10.1038/s41929-019-0244-4

- “Highly cited paper”

Capturing the genesis of an active Fischer–Tropsch synthesis catalyst with operando X-ray nanospectroscopy

Ilse K. van Ravenhorst, **Charlotte Vogt**, Koen Bossers, José G. Moya-Cancino, David Vine, Frank M. F. de Groot, Florian Meirer and Bert M. Weckhuysen

\*Authors contributed equally to the work

Angewandte Chemie International Edition 2018, 57, 11957-11962.

doi.org/10.1002/anie.201806354

- “Hot paper”

Understanding carbon dioxide activation and carbon-carbon coupling over nickel

**Charlotte Vogt**, Matteo Monai, Ellen B. Sterk, Jonas Palle, Bart Zijlstra, Esther Groeneveld, Peter H. Berben, Jelle Boereboom, Emiel J. M. Hensen, Florian Meirer, Ivo A. W. Filot, Bert M. Weckhuysen

Nature Communications, 2019, 10, 5330.

doi.org/10.1038/s41467-019-12858-3

- Selected as “1 of the 50 most influential papers in the field of Chemistry and Materials Science”

Stable niobia-supported nickel catalysts for the hydrogenation of carbon monoxide to hydrocarbons

Carlos Hernández Mejía, **Charlotte Vogt**, Bert M. Weckhuysen, Krijn P. de Jong

Catalysis Today, 2020, 343, 56-62.,

doi.org/10.1016/j.cattod.2018.11.036

In Situ Shell-Isolated Nanoparticle-Enhanced Raman Spectroscopy of Nickel-Catalyzed Hydrogenation Reactions

Caterina S. Wondergem, Josepha J. G. Kromwijk, Mark Slagter, Wilbert L. Vrijburg, Emiel J. M. Hensen, Matteo Monai, **Charlotte Vogt**, Bert M. Weckhuysen

ChemPhysChem, 2020, 21, 625-632.

doi.org/10.1002/cphc.201901162

Structure sensitivity in steam and dry methane reforming over nickel: Activity and carbon formation

**Charlotte Vogt**, Jelle Kranenburg, Matteo Monai, Bert M. Weckhuysen

ACS Catalysis, 2020, 10, 1428-1438.

doi.org/10.1021/acscatal.9b04193

Alkali promotion in the formation of CH<sub>4</sub> from CO<sub>2</sub> and renewably produced H<sub>2</sub> over supported nickel catalysts

**Charlotte Vogt**, Jochem Wijten, Chantal Leal Madeira, Oscar Kerkenaar, Kangming Xu, Rupert Holzinger, Matteo Monai, Bert M. Weckhuysen

ChemCatChem, 2020, 12, 2792-2800.

[doi.org/10.1002/cctc.202000327](https://doi.org/10.1002/cctc.202000327)

Understanding the activation of ZSM-5 by Phosphorus: Localizing phosphate groups in the pores of phosphate-stabilized ZSM-5

Jaap N. Louwen, Lambert van Eijck, **Charlotte Vogt**, Eelco T.C. Vogt

Chem. Mater., 2020, 32, 9390–9403.

<https://doi.org/10.1021/acs.chemmater.0c03411>

On the Cobalt Carbide Formation in a Co/TiO<sub>2</sub> Fischer-Tropsch Synthesis Catalyst as Studied by High-Pressure, Long-Term Operando X-Ray Absorption Spectroscopy and Diffraction

Ilse K. van Ravenhorst, Adam S. Hoffman, **Charlotte Vogt**, Alexey Boubnov, Nirmalendu Patra, Ramon Oord, Cem Akatay, Florian Meirer, Simon R. Bare, Bert M. Weckhuysen

ACS Catalysis, 2021, 11, 2956-2967.

<https://doi.org/10.1021/acscatal.0c04695>

## Accepted (or in press) papers

### Submitted papers

Reactant-induced and size-dependent effects of metal nanoparticle restructuring during catalysis

**Charlotte Vogt**, Esther Groeneveld, Matteo Monai, Davide Ferri, Rutger A. van Santen, Maarten Nachtegaal, Raymond R. Unocic, Anatoly Frenkel, Florian Meirer, Bert M. Weckhuysen

Nature Chemistry, 2nd round review.

Integrated Carbon Dioxide Capture and Fixation via Aqueous Phase Hydrogenation of Carbonates

Xiaochen Zhang, Mengzhu Li<sup>1</sup>, Ang Li, Yuchen Deng, Mi Peng, **Charlotte Vogt**, Matteo Monai, Junxian Gao, Xuetao Qin, Yao Xu, Qiaolin Yu, Meng Wang, Guofu Wang, Zheng Jiang, Xiaodong Han, Casper Brady, Wei-Xue Li, Jin-Xun Liu, Bingjun Xu, Bert M. Weckhuysen, and Ding Ma

Article submitted to Nature, under review.

Operando Spectroscopy Reveals Dynamic Metal–Support Interactions during CO–CO<sub>2</sub> Hydrogenation for C–C Coupling Selectivity Enhancement over Ni/TiO<sub>2</sub>

Matteo Monai, Angela E. M. Melcherts, Tomáš Ducho<sup>?</sup>, B?etislav Šmíd, Esther Groeneveld, P. Berben, **Charlotte Vogt**, and Bert M. Weckhuysen

ACS Catalysis, Submitted article.

## Review papers

The concept of active sites in heterogeneous catalysis

**Charlotte Vogt**, and Bert M. Weckhuysen

Nature Chemistry Reviews, invited review, submission pending.

## 15.3 Books

## 15.4 Book chapters

## 15.5 Refereed papers in conference proceedings

## 15.6 Patents (granted)

## 15.7 Research reports and other publications

## 16 CONFERENCES

### 16.1 Plenary, keynote or invited talks

#### International

1. **Charlotte Vogt**, Bert M. Weckhuysen , Structure sensitivity in CO<sub>2</sub> reduction over Ni-based catalysts, Joint Centre for Chemergy Research, Netherlands, 2018. (Invited Talk)
2. **Charlotte Vogt**, How can we use CO<sub>2</sub> to make useful materials using catalysts?, Niels Stensen Conference for Sustainability, Netherlands, 2020. (Invited Talk)
3. **Charlotte Vogt**, Operando spectroscopy in the clean energy transition, Award lecture as short-listed finalist at Organic Chemistry Reaxys PhD symposium, Canada, 2020. (Invited Talk)
4. **Charlotte Vogt**, Quick-XAS to understand structure sensitivity in catalysis, Stanford Synchrotron radiation users meeting, USA, 2020. (Invited Talk)
5. **Charlotte Vogt**, Structure sensitivity in catalysis, Israel Chemical Society Meeting, Israel, 2020. (Invited Talk)
6. **Charlotte Vogt**, Structure sensitivity in catalysis, Seminar, Sweden, 2020. (Invited Talk)

#### National

1. , Israel

### 16.2 Contributed Talks and Posters

#### International Oral

1. **Charlotte Vogt**, Esther Groeneveld, Li Lu, Christopher J. Kiely, Gerda Kamsma, Peter H. Berben, Maarten Nachtegaal, Florian Meirer, Bert M. Weckhuysen, Unravelling structure sensitivity in CO<sub>2</sub> hydrogenation over Ni, **Charlotte Vogt**, Esther Groeneveld, Li Lu, Christopher J. Kiely, Gerda Kamsma, Peter H. Berben, Maarten Nachtegaal, Florian Meirer, Bert M. Weckhuysen, Netherlands. 03-2017 .
2. **Charlotte Vogt**, Esther Groeneveld, Li Lu, Christopher J. Kiely, Gerda Kamsma, Peter H. Berben, Maarten Nachtegaal, Florian Meirer, Bert M. Weckhuysen, Unravelling structure sensitivity in CO<sub>2</sub> hydrogenation over Ni, 25th North American Catalysis Society Meeting, USA. 06-2017 .
3. **Charlotte Vogt**, Jonas Palle, Esther Groeneveld, Florian Meirer, Bert M. Weckhuysen, The structure sensitivity of carbon-carbon coupling in CO<sub>2</sub> hydrogenation over Ni, 5th CHemistry as an INnovating Science (CHAINS) Conference, Netherlands. 12-2017 .
4. Structure sensitivity in CO<sub>2</sub> hydrogenation over Ni, Structure sensitivity in CO<sub>2</sub> hydrogenation over Ni, Materials **Characterization** Catalysts, Switzerland. 01-2018 .
5. Unravelling structure sensitivity in CO<sub>2</sub> hydrogenation over Ni, Unravelling structure sensitivity in CO<sub>2</sub> hydrogenation over Ni, Syngas Convention - Fuels and Chemicals from Synthesis Gas: State of the Art 3, South Africa. 03-2018 .
6. **Charlotte Vogt**, Esther Groeneveld, Li Lu, Christopher J. Kiely, Gerda Kamsma, Peter H. Berben, Maarten Nachtegaal, Florian Meirer, Bert M. Weckhuysen, Syngas Convention - Fuels and Chemicals from Synthesis Gas: State of the Art 3, 6th International Congress on Operando Spectroscopy, Spain. 04-2018 .
7. **Charlotte Vogt**, Esther Groeneveld, Raymond Unocic, Maarten Nachtegaal, Florian Meirer, Bert M. Weckhuysen, Reactant Induced, and Particle size dependent restructuring in catalytic nanoparticles, 8th Tokyo Conference on Advanced Catalytic Science and Technology, Japan. 08-2018 .
8. **Charlotte Vogt**, Ronny Neumann, Baran Eren, Bert M. Weckhuysen, The effect of nanostructuring in the electrocatalytic reduction of CO<sub>2</sub>, Electrochemical Conversion & Materials Conference, Netherlands. 06-2019 .
9. **Charlotte Vogt**, Matteo Monai, Bert M. Weckhuysen, Structure sensitivity in power-to-methane , 14th European Congress on Catalysis, Germany. 08-2019 .
10. **Charlotte Vogt**, Bert M. Weckhuysen, Structure sensitivity in catalysis, 7th CHemistry as an INnovating Science (CHAINS) Conference, Netherlands. 12-2019 .

## International Poster

1. , Israel

## National Oral

1. , Israel

## **National Poster**

1. , Israel

## **16.3 Participation in organizing conferences**

1. Israel